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Duncan Alexander Robertson

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TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P.
1300 EAST NINTH STREET, SUITE 1700
CLEVEVLAND, OH 44114

EXAMINER

MEHTA, PARIKHA SOLANKI

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,509	Applicant(s) ROBERTSON ET AL.	
	Examiner PARIKHA S. MEHTA	Art Unit 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/29/09.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 9-12 and 19 are objected to because of the following informalities:
In claims 9, 10 and 19, "scanning means" should be replaced with --means for scanning--.
Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: elements configured to generate and display an image as set forth in the preamble of claim 1. The present claims set forth nothing more than elements configured to collect and detect radiation, without the radiation source and imaging elements required to render the system an "imager". Similarly, claim 13 sets forth function unsupported by structure to produce such function (i.e., the function of forming an image without reciting any elements such as an image processor or display to achieve such image formation).
4. Claims 4, 6 and 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
Claim 4 recites "the collected radiation having a Gaussian sensitivity profile" without sufficient antecedent basis.
Claim 6 recites "the collected radiation having a Bessel sensitivity profile" without sufficient antecedent basis.
In claim 9, it is unclear what is being set forth by the recitation "sweep the collection path through 360°". Furthermore, the specification describes the scanning means as being rotated by a motor separate from the scanning means, but does not describe the scanning means itself as being operable

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rotate (i.e., "sweep"). As such, it is unclear how the scanning means alone can be operable to rotate/sweep along any path.

Regarding claims 10-12 and 22, these claims further limit the "means for scanning" set forth in claim 1, wherein claim 1 invokes 35 U.S.C. 112, sixth paragraph. Claims 10-12 and 22 modify said means by some structure, material, or acts recited in the claim. It is unclear whether the recited structure, material, or acts are sufficient for performing the claimed function which would preclude application of 35 U.S.C. 112, sixth paragraph. If applicant wishes to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claim so that the phrase "means for" or "step for" is clearly **not** modified by sufficient structure, material, or acts for performing the claimed function. If applicant does **not** wish to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claim so that it will clearly not be a means (or step) plus function limitation (e.g., deleting the phrase "means for" or "step for").

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-4, 6, 8-10, 20, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edrich (US Patent No. 4,407,292), hereinafter Edrich ('292), of record, in view of Volkov et al (US Patent No. 6,777,684), hereinafter Volkov ('684).

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Regarding claims 1, 4, 6 and 22, Edrich ('292) teaches a non-contact passive medical scanning imager including a detector 5, a collector 2, and scanning means 1. Examiner notes that the collected radiation of Edrich ('292) inherently has some sensitivity profile along the collection path, and the recitation of "defined" does not structurally distinguish the recited collector from that of the prior art. Similarly, the recitation of "substantially" is subjective and open to extremely broad interpretation, and as such the recitation is not given significant patentable weight.

Edrich ('292) lacks isolation means in the path of the collected radiation for preventing signal leakage from the detector being emitted towards a patient's body. In the same field of endeavor, Volkov ('684) teaches placement of a quasi-optical isolator 21 between the field of view (i.e., the patient's body) and the detector for the purpose of directing the radiation towards the imaging plane, which is interpreted to constitute prevention of signal leakage as claimed (col. 3 line 67 - col. 4 line 3). It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Edrich ('292) to include the isolator of Volkov ('684) and thereby yield the claimed invention, in order to better control the direction of radiation towards the imaging plane.

Regarding claims 2, 4 and 20, Volkov ('684) teaches a corrugated feedhorn (col. 65 lines 55-56), which is known in the art to produce a Gaussian beam (i.e., a beam having a profile which is symmetrical and reduced about a given spot along a collection path).

Regarding claim 3, Edrich ('292) teaches the collector to comprise a waveguide (col. 2 lines 54-55).

Regarding claim 8, the horn of Edrich ('292) is capable of focusing the collected beam onto the detector and therefore constitutes "focusing means".

Regarding claims 9 and 10, the deflector 1 of Edrich ('292) constitutes a reflector, and it is capable of being manually rotated about an arbitrary axis along a complete circular path (i.e., it is "rotatable about one axis" and "operable to sweep a path of 360 degrees"). In claim 10, the recitation "to scan the collection path..." is nothing more than a recitation of intended use, which is not given patentable weight.

Regarding claim 23, Edrich ('292) teaches a computer 12 configured to display an image associated with data of the collected radiation (col. 3 lines 16-29).

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edrich ('292) and Volkov ('684) as applied to claim 1 above, and further in view of Kool et al (US Patent No. 5,953,644), hereinafter Kool ('644).

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Neither Edrich ('292) nor Volkov ('684) teach the feedhorn as arranged to convert a Gaussian beam to a waveguide mode. In the same field of endeavor, Kool ('644) teaches a feedhorn attached to a receiver via a waveguide section 15 (Fig. 1). It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Edrich ('292) and Volkov ('684) to arrange the feedhorn next to a waveguide section as taught by Kool ('644) in order to couple the received radiation to the detector.

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edrich ('292) and Volkov ('684) as applied to claim 1 above, and further in view of Huguenin et al (US Patent No. 5,760,397), hereinafter Huguenin ('397), of record.

Neither Edrich ('292) nor Volkov ('684) teach the imager as forming an image from radiation emitted in the range of 90-100 GHz. Edrich ('292) teaches imaging for frequencies between 8-36 GHz (col. 4 lines 56-60). In the same field of endeavor, Huguenin ('397) teaches that it is known that the human body emits radiation in the frequency range of 30 GHz - 300 GHz (col. 1 lines 17-25). It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Edrich ('292) and Volkov ('684) to form images from radiation emitted in the frequency range of 30-300 GHz, which includes 90-100 GHz as claimed, in order to form a more comprehensive image of the radiation emitted by the human subject.

10. Claims 14, 15, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edrich ('292) and Volkov ('684) as applied to claim 1 above, and further in view of Huguenin et al (US Patent No. 5,047,783), hereinafter Huguenin ('783), of record.

Regarding claims 14 and 15, neither Edrich ('292) nor Volkov ('684) teach at least one calibration load. In the same field of endeavor, Huguenin ('783) teaches that provision of a calibration load in a millimeter wave imaging system is effective to enable noise cancellation for enhancing image resolution (col. 2 lines 8-46). It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Edrich ('292) and Volkov ('684) to include at least one calibration load as taught by Huguenin ('783), in order to achieve noise cancellation.

Regarding claims 17 and 18, neither Edrich ('292) nor Volkov ('684) teach the detector to be linearly polarized. In the same field of endeavor, Huguenin ('783) teaches a linearly polarized detector and associated polarizing element configured to align received with the detector, for the purpose of enabling noise cancellation as discussed for claims 14 and 15. It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Edrich ('292) and Volkov ('684) to

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employ the linearly polarized detector and polarizer of Huguenin ('783) and thereby yield the claimed invention, in order to achieve noise cancellation.

11. Claims 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edrich ('292), Volkov ('684) and Huguenin ('783) as applied to claim 14 above, further in view of Gasiewski (US Patent No. 5,231,404), hereinafter Gasiewski ('404).

Regarding claim 16, either Edrich ('292), Volkov ('684), nor Huguenin ('783) teach two calibration loads, nor do they teach means for maintaining the loads at different temperatures. In the same problem solving area, Gasiewski ('404) teaches means for calibrating a millimeter wave radiometer (i.e., "detector") comprising two calibration loads of differing temperatures (col. 3 lines 48-54). It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Edrich, ('292), Volkov ('684) and Huguenin ('783) to include the two calibration loads of Gasiewski ('404), as such a modification would require nothing more than the mere combination of known prior art elements to yield predictable results, which has previously been held as obvious and unpatentable (*KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385).

Regarding claim 19, neither Edrich ('292) nor Volkov ('684) teach the scanning means as scanning the patient such that the collection path is in the form of a circumference of a notional cylinder at each of a plurality of steps. Edrich ('292) does teach scanning the patient at a plurality of indexed steps (). In the same field of endeavor, Gasiewski ('404) teaches scanning an object by rotating scanning means along a circumferential collection path (Fig. 3). It would have been obvious to one of ordinary skill in the art at the time of invention to have modified Edrich ('292) and Volkov ('684) to include the rotating means of Gasiewski ('404) and thereby yield the claimed invention, as such a modification would require nothing more than the mere combination of known prior art elements to yield predictable results, which has previously been held as obvious and unpatentable (*KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385).

Response to Amendments and Arguments

12. Applicant's amendments are sufficient to overcome the previous objection to claims 1-22 and the previous rejection of claims 1-22 under 35 U.S.C. 112, first paragraph, which are hereby vacated accordingly. Examiner notes that Wikipedia entries, as cited by the Applicant at page 8 of the Remarks,

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are generally not regarded by the Office to be substantive references having reliable technical or academic merit.

13. Applicant's arguments regarding the previous objection to the specification have been fully considered but are unpersuasive. MPEP 605 clearly states that the title of the invention should be "brief but technically accurate and descriptive", and that "[w]here the title is not descriptive of the invention claimed, the examiner should require the substitution of a new title that is clearly indicative of the invention to which the claims are directed" (606.01). It also states that such requirements are made to facilitate a gain in "informative value in indexing, classifying, searching, etc" (606.01). The broad title "Medical Imaging Apparatus" relays little to no such useful information; it could be used to describe anything from an ultrasound transducer to a nuclear scanner. Accordingly, the title to the specification remains unacceptably non-descriptive and is accordingly objected to herein.

14. Applicant's arguments regarding the previous rejection of claims 1-22 under 35 U.S.C. 112, second paragraph, as omitting essential elements have been fully considered but are unpersuasive. Applicant contends that such rejection is improper on the basis that the present specification purportedly does not set forth an imager as being critical for the invention to function, and therefore the claim should not be considered as missing a critical element for not reciting an imager (Remarks p. 10). Applicant appears to ignore the fact that the preamble claim clearly establishes the inventive structure as an imager, and as the term "imager" was not redefined in the specification to mean anything other than what is commonly known in the art, which is "that which generates and displays images", the claim is reasonably expected to set forth some kind of structure which produces images. The present claims fail to set forth any such structure, and accordingly are deficient under 35 U.S.C 112, second paragraph as omitting essential elements. Applicant refers to a more specific definition of the term "imager", as defined by Wikipedia, wherein the term is described in such a way that it is not required to produce images, but must merely represent data as "maps". Again, Applicant is reminded that Wikipedia is not considered by the Office to be a reputable source of verifiable reference information, and content found therein accordingly does not constitute a reliable basis for making determinations of patentability. Furthermore, even if the Examiner were to interpret "imager" according to the Wikipedia definition, the presently claimed structure would still fail to constitute such an imager, as the claims lack any structure which generates a representation of medical image data as a map. Additionally, claim 13 clearly recites the imager as "operable to form an image"; even though the term "operable" is not considered a positive structural

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recitation, the claim clearly attempts to set forth the claimed invention as generating an image (or even a "map", as it were) without reciting any structure configured to do so. If Applicant does not wish to amend the claim to recite any elements which actually image the body, the preamble of claim 1 should be amended to accurately reflect the nature of the interrelated elements set forth therein and claim 13 should be amended to remove any language directed to forming an image.

As Applicant's arguments are wholly unpersuasive for at least the foregoing reasons, the rejection of claims 1-22 as omitting essential elements is in fact proper, and the rejection is maintained and reiterated herein.

15. Applicant's amendments are sufficient to overcome the previous rejection of claims 4-7, 10-12, 14-16, 18, 20 and 21 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Several claims remain indefinite under 35 U.S.C. 112, second paragraph, in view of deficiencies of the claim amendments, as detailed herein. Regarding claim 9, Applicant points to paragraphs 41 and 51 as sufficiently describing the scanning means as "being operable to sweep the collection path through 360". Paragraph 41 of the present specification clearly distinguishes the mirror (i.e, the scanning means) as being a stationary element which is rotated by a motor. Accordingly, the scanning means itself is not disclosed as being operable to rotate without the motor, which is not set forth in the claim. Furthermore, for clarity, it is recommended that the language "sweep through 360" be changed to "rotate 360 degrees".

For at least these reasons, the previous rejection of claim 9 under 35 U.S.C. 112, second paragraph, is proper and is maintained herein.

16. Applicant's arguments regarding the previous rejection of claims 1-22 as being unpatentable over the prior art have been fully considered but are unpersuasive.

Applicant challenges Examiner's interpretation of "defined sensitivity profile" by alleging that she has failed to give the term its broadest reasonable interpretation consistent with the specification (Remarks p. 14). Applicant points to paragraph 8 of the specification as adequately defining said recitation with the statement "the sensitivity profile is defined in that its general form is known along the whole of the collection path". Examiner maintains the position that, although the specification describes a specific interpretation of "defined", it still fails to put a skilled artisan on clear notice that the term as used therein can only be interpreted within that narrow example. Furthermore, the statement to which Applicant refers is itself so broad that it fails to set forth any substantive limitation for the term; "its

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general form" could be interpreted to mean anything including the mere knowledge that the profile is known to exist at all. Accordingly, Examiner's interpretation of "the defined sensitivity profile" is in fact proper, and Applicant's arguments are ineffective to overcome the prior art.

Applicant goes on to attack Edrich ('292) on the basis that the reference radiation maintains a uniform beam shape as it is scanned in a near-field focusing arrangement, whereas the present application is directed toward a fundamental Gaussian mode beam which maintains its intensity profile as it propagates through near and far fields (Remarks p. 15). Without acquiescing to Applicant's allegations, Examiner respectfully notes that the features upon which Applicant relies (i.e., the Gaussian mode beam, antenna design considerations, and functional propagation distance) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Accordingly, Applicant's arguments have no bearing on the propriety of the rejection.

Applicant purports that Volkov ('684) fails to teach a quasi-optical isolator that prevents signal leakage from the detector being emitted towards the patient's body (Remarks p. 16). Volkov ('684) clearly states that the quasi-optical elements directs radiation from the field of view towards the imaging plane (col. 4 lines 1-5), wherein such direction of radiation prevents the "leakage" of such radiation (i.e., signal) from being emitted towards the body by instead channeling it toward the imaging plane. Focusing of a radiation signal, by definition, constitutes "isolation". Accordingly, the reference meets the claim.

Applicant argues against Volkov ('684) as applied to claim 2 on the basis that the reference allegedly fails to specifically disclose a "corrugated" feedhorn (Remarks p. 16). At line 56 of col. 65, Volkov ('684) clearly teaches that the "corrugated horn antenna" design is "very typical". As such, the reference does in fact meet the claim.

Applicant challenges Examiner's statement of Official Notice that it is known in the art that a corrugated feedhorn produces a Gaussian beam (Remarks p. 17). Examiner provides herein an exemplary reference (Wylde 1984) to show the known relationship between corrugated feedhorns and Gaussian beams at the time of invention.

Applicant alleges that the Examiner ignored the language of claim 6 in the prior rejection (Remarks p. 18). In view of the ambiguity of the previous recitation of "such that", the claim was interpreted as merely setting forth limitations upon the collected radiation, which was not definitively set forth as part of the inventive structure, and therefore the language of claim 6 was not given patentable weight. Similarly, the present amendments recite an element of radiation without proper antecedent basis, and as such the claim is interpreted as only requiring the collector to generally collect radiation.

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Applicant argues that Edrich fails to meet the limitations of claim 9 because the reference purportedly fails to teach the scanning means as being operable to repeatedly sweep the collection path through 360 degrees (Remarks p. 18). As was previously discussed, "operable" does not require explicit teaching or disclosure by the reference; so long as the reference structure is capable of performing the function, it meets the claim. As the reflector of Edrich is capable of being rotated, manually or otherwise, it meets the claim. Similar arguments apply to Applicant's allegations regarding claim 10; "rotatable" does not require explicit teaching by the prior art.

Applicant contends that the Examiner previously ignored the claim language of claim 20 (Remarks p. 19). Examiner respectfully points out that the previous rejection was predatory upon the ambiguity of the now-canceled term "given". Furthermore, the reference collection path inherently intersects the focal plan of the scanning means, as the reference system would not otherwise be functional, and since the reference describes collection of a Gaussian beam, which inherently travels such that there is at least one spot about which it is symmetrical, the references meet the claim.

Applicant challenges the reference range of 30-300 GHz as being too broad to anticipate the narrow range of 90-100 GHz recited by the claim, on the purported basis that the present specification describes said range as "giv[ing] a reasonable compromise between penetration depth and spatial resolution" (Remarks p. 21). Applicant's suggestion that the reference range is analagous a genus whereas the claimed range is analagous to a species is nothing more than a statement of opinion unsubstantiated by factual evidence to prove that a skilled artisan would not be motivated to try to use a range of 90-100 GHz given a reference disclosure of 30-300 GHz. Furthermore, the passage of the present specification referenced in the arguments is not a clear, definitive statement that the range of 90-100 GHz produces a novel, unexpected result, as is required in showing that a feature is patentably advantageous over the prior art.

Applicant argues that the Examiner has not adequately considered claim 14 in its entirety (Remarks p. 22). Examiner notes that the recitation "for emitting..." is nothing more than a recitation of intended use unsupported by a clear recitation of structure configured to produce such function, and therefore the limitation is not given patentable weight. Furthermore, Applicant is attempting to improperly limit the Office's interpretation of "calibration" to only that which is described in the specification, when in fact Applicant has failed to clearly redefine the term to the extent that a skilled artisan would be put on clear notice that the term can only be interpreted that way in the context of the present invention (*Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999).). Similar rationale applies to Applicant's arguments regarding claim 15.

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Applicant challenges the rejection of claim 16 on the basis that the Examiner purportedly did not neglects the temperatures which are recited to straddle a range of subcutaneous body temperatures as set forth in claim 16 (Remarks p. 23). A skilled artisan would readily recognize as a matter of common sense that, since Edrich and Volkov are directed towards imaging the body, any teaching of temperature provided by Gasiewski should also be interpreted in light of typical body temperatures, and as such would find it obvious to try to modify Edrich and Volkov with Gasiewski in the context of such body temperatures (*KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385).

Applicant goes on to suggest that Gasiewski fails to teach or suggest scanning along a circumferential path (Remarks p. 25). Examiner maintains that rotating a reflector along a central axis, and scanning along a "conical swath" both satisfy the limitation of scanning such that the collection path has the shape of a circumference of a cylinder, wherein the cylinder may be irregular or regular in its lengthwise diameter.

As Applicant's arguments are wholly unpersuasive for at least the foregoing reason, claims 1-22 remain unpatentable over the prior art as reiterated herein. Furthermore, newly added claim 23 is also found to be unpatentable over the prior art.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PARIKHA S. MEHTA whose telephone number is (571)272-3248. The examiner can normally be reached on M-F, 8 - 4:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on 571.272.4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BRIAN CASLER/

Supervisory Patent Examiner, Art Unit

3737

/Parikha S Mehta/

Examiner, Art Unit 3737